Remarks
Dr. Anne Harlan
NAS Information Architecture Committee
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Good Morning.

I am so very pleased and honored to address this distinguished and highly specialized forum. The NAS Information Architecture Committee is a group that will be drawing the blueprints for the nation's skyways of the future ... playing a crucial role in leading aviation safely and efficiently into the next century. The work you do is SO important.

Aviation has seen a truly phenomenal growth in the 95 years since the Wright Brothers first flew -- perhaps more so than ANY other industry. And the primary reason for this growth is the safety and effectiveness of the National Airspace System -- the NAS.

The FAA can certainly be proud of our part in operating the NAS and managing the growth of this remarkable system. As aviation continues to grow at such a rapid pace and new technologies emerge, we are committed to maintaining the highest safety standards and operating the safest, most efficient air traffic system in the world.

It is apparent that many new, exciting and high profile challenges are now facing us.

The Year 2000 is just around the corner. To prepare for "Y2K," the FAA is establishing and maintaining a data base of all systems, determining their criticality to the NAS, and ensuring that they are "Y2K" compliant. We are also conducting end-to-end testing of the complete air traffic control system to assure the safety of the National Airspace System in the year 2000. This is an enormous task which the agency is taking very seriously. FAA Administrator Jane Garvey has given "Y2K" top priority as an agency issue.

Another key agency focus is developing a Global Positioning System that will provide significant economic and safety benefits to the entire aviation community. Before we can proceed with GPS though, we need to find a way to provide a balanced backup system.

Free Flight is another area of strong interest with a focus on early user benefits. Free flight and collaborative decision making are critical initiatives that will meet the user needs of the community, and the FAA is feeling enormous pressure to implement FFP1 as soon as possible.

These challenges all have important implications for the future growth and development of the National Airspace System.

But there is another challenge facing us that is more subtle, yet I believe equally important. You won't read about this on the front page of the New York Times or see it featured on ABC World News tonight, but it is the "glue" that will hold the NAS together. And that glue is INTEROPERABILITY -- the interoperabilitly among the unique, diverse systems that comprise the current and future NAS structure.

Creating this interoperability is a real challenge to all of us. It is infinitely important to the future of the National Airspace System, and all of air travel.

The different systems that comprise the NAS have been developed and enhanced over many years. There is no question that these systems are safe and they work well. But all too often, they acquire their data independently of eachother, resulting in a "stovepiping" approach. With this "stovepiping," the systems do not exchange this information as efficiently as they could, and in turn don't serve their maximum potential.

We need to change that independent approach, and to open our avenues of communication to improve the information exchange among individual systems, thus improving the efficiency and effectiveness of the total National Airspace System.

And that change can begin right here. You are the key players who can make these changes a reality.

As more and more systems become automated, it becomes even more important that they share information with eachother.

Vice President Gore has emphasized to us that we are clearly in the information age -- everywhere we turn we are asked to do more and more with information ... and to do more to get it, more accurately and quickly, to those who need it to make better decisions.

The NAS is abundant with information. It works on it and thrives on it. One of the most important keys to the modernization of the NAS is extensive quality information interchange among the systems comprising the NAS, and among the NAS users.

Significant changes are needed to meet the needs of the users, and to increase the efficiency and effectiveness of systems, while accommodating global growth of aviation.

It is the goal of the FAA to evolve the NAS into a more integrated set of systems with enhanced information standardization and functionality. A key step toward this end is commonality among the NAS Architecture components. NAS Architecture must assure that this commonality is achieved.

By the year 2005, the National Airspace System will take a human-centered approach to maximize the efficient delivery of air traffic services to users. We fully expect system processors and work stations to be designed to enhance the exchange of information between NAS information systems, service providers and users. We are working toward that end, and this is the group to see that through.

It is noteworthy and commendable the NAS Information Architecture Team has already implemented a plan to standardize the NAS by developing a collaborative computing process.

The first phase of this plan provides an environment that supports remote user access to shared data and the ability to review information, submit comments, modify documentation, manage configuration, and encourage users to engage in discussion groups. This enhanced environment is sure to lead to the standardization NAS data and the collaboration.

Now, for this envisioned data exchange to successfully take place, all the systems comprising the NAS will need to share a Metadata Repository. This repository will take the form of a centralized data dictionary of NAS data elements and their definitions, which can be referenced and commented on by ALL system developers.

The idea is that the system developers -- many of you who are here today -- will be able to use these standard data element definitions in system interfaces between yours and other systems. In addition, as system developers, we encourage you to implement these standards within your own programs.

This repository will be an excellent common reference system. that will help overcome obstacles that currently prevent systems from communicating with eachother.

Creating the metadata repository will require the collaboration of all NAS participants, and again, that's where you all come in! While NAS architects and Integrated Product Teams will be the key contributors, input from other users will be necessary to assure that this repository is complete.

I am pleased to say that at the William J. Hughes Technical Center, we are actively participating in these efforts toward a more collaborative NAS environment. Our NAS System Engineering Branch is now at work developing the Collaborative Data Integration Management System -- the CDIMS.

This system will use the Internet, with its broad realm of accessibility and connectivity, to help improve overall information exchange. It will do this by providing an effective pathway to collaboration, to standardizing NAS information shared among NAS area experts and facilitating NAS modernization.

Technical issues aside, what are the remaining issues??

I see it two-fold. awareness of the issue, and openness are the key ingredients here. It is easy to say “My system works fine -- what’s the problem?”

The door that is being opened by all of you leads to collaborative validation of the operational concepts and the architecture of the NAS -- so that all systems work fine...together....as one system.

This door leads further to a collaborative use of simulation technology through Simulation Based Acquisition -- or SBA. SBA is a Department of Defense acquisition process initiative under way at the Technical Center and at other sites.

The primary requirement for a simulation-based approach to acquisition is accurate and timely data availability regarding requirements, performance, system capability, risk, and of course cost and schedule. This information should be accessible to all authorized participants in the acquisition process.

It is important that the entire NAS community begin to work to standardize the acquisition, use and exchange of data and information. This is an all-inclusive effort involving those who develop requirements, design, acquire, implement, maintain, and use the various NAS systems and subsystems.

But again, all of this comes about through the establishment of consistent models of the NAS - which again is contingent on consistent data and information ... and consistent data hinges on sharing of information. And that’s where you all come in -- that’s why you are here today.

The responsibility of providing future information services cuts across traditional FAA management structures. Roles and responsibilities for common information service definition, development, procurement and operation need to be reexamined.

New ways of doing business are needed, such as NAS Level Services. New organizations may even be needed that specialize in managing NAS information.

The NAS Information Architecture Committee is just the group to effectively take on responsibilities for common information services. The committee is also the ideal vehicle to document data standards, produce prototype information management systems, and examine emerging technologies.

“Achieving Interoperability with a NAS Common Data Architecture” is the focus of today’s symposium. I am so pleased to launch this series of meetings set to solve the issues associated with developing a NAS system that, while remaining the safest in the world, will also increase in efficiency and effectiveness through increased data exchange.

There is so much we can all do. I am confident that the FAA, and more specifically the NAS Information Architecture Committee, and each of you here today, can make this happen.

I assure you, the Technical Center is strongly committed and stands ready to do whatever we can to facilitate your success and contribute to improving future communication in the NAS. We are a valuable resource. Please feel free to contact me with any suggestions or proposals of how we can contribute further to this crucial effort.

I wish you all a very successful, productive meeting. And I thank you for the opportunity to address you today.

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